

Coating Selector & Maintenance Guide

Organic pre-coated metals, designed for the most demanding controlled environments

isocab

By Kingspan



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Internal Environment

Controlled environments take many different forms and the performance and functionality (in-use) will depend on the requirements of the specific project. The internal environment will also be subjected to a variety of conditions which could affect the performance of materials and systems.

EN ISO 12944-2 defines and grades corrosive environments in five classes (C1 - C5) depending on their exposure to corrosion factors and is an indication of the conditions that the coating is designed to resist for extended periods.

The corrosive factors of an internal environment are determined by the presence of corrosive chemicals and / or micro-organisms in the internal atmosphere, relative humidity and also by the frequency of cleaning, aggressiveness of the cleaners, degreasers, and sanitisers, as well as the methods of cleaning.

Corrosiveness Factors

C1 - Very low	Dry environment with no attack from corrosive chemicals and / or micro-organisms. Routine cleaning (not more than once a month) using neutral cleaning agents.
C2 - Low	Environment where condensation may occur, with no attack from corrosive chemicals and / or micro-organisms although the walls may occasionally be splashed with slightly corrosive liquids. Routine cleaning (not more than once a month) using neutral cleaning agents.
C3 - Medium	Environment with frequently high humidity and where corrosive chemicals and / or micro-organisms are present. Non-intensive cleaning (not more than once a week) using higher pH cleaning agents (pH 5-9).
C4 - High	Environment with constant high humidity and where high concentrations of corrosive chemicals and / or micro-organisms are present. Intensive cleaning (not more than once a day) using higher pH cleaning agents (pH 5-9).
C5 - Very High	Environment with permanent condensation and where high corrosive chemicals and / or microorganisms are present. Intensive cleaning (not more than once a day) using higher pH cleaning agents (pH 5-9).

Coating Selection

Isocab CLEANsafe coatings are designed specifically for controlled environments. Each coating has specific properties suited to different environments and it is therefore important to choose the right coating to meet the appropriate classification of corrosive environment and type of activities.

The table below shows examples of types of facilities, recommended inspection periods and the suitability of the coating for each corrosive environment classification.

Technical data on each of the coatings can be found on pages 5 – 10.

	Corrosiveness	Inspection Period	Type of Application	Isocab CLEANsafe Coatings						
				15	25	55	150	Inox 150+	Inox 304	Inox 316L
C1	Very low	Annually	Storage of dry packaged products, freezers (except unpacked fish), canteens, locker rooms, toilets, offices, shops, schools, hotels, airport terminals	✓	✓	✓	✓	✓	✓	✓
C2	Low	Annually	CA storage, chill stores, sorting and packing of fruit and vegetables, storage of packed meat and dairy products, exhibition halls, vehicle depots, sports halls	✗	✓	✓	✓	✓	✓	✓
C3	Medium	Every 6 months	Food production and preparation areas, refrigeration of meat products, ice cream production, butter production, laundries, breweries, dairies, wine cellars, processing of meat (cold cuts), bread-making labs	✗	✗	✓	✓	✓	✓	✓
C4	High	Every 3 months	Swimming halls, communal showers, dishwashing areas, waterparks, industrial kitchens, storage of unpacked fish, abattoirs, mushroom industry, cheese maturing rooms, meat or fish cuttings, scalding and evisceration	✗	✗	✓	✓	✓	✓	✓
C5	Very high	Every 3 months	A high humidity or aggressive atmosphere for example the preparation of tripe, tanneries, dye mills, paper mills, pickling, coking, preparation of marine produce	✗	✗	✗	✗	✓	✓	✓

Notes

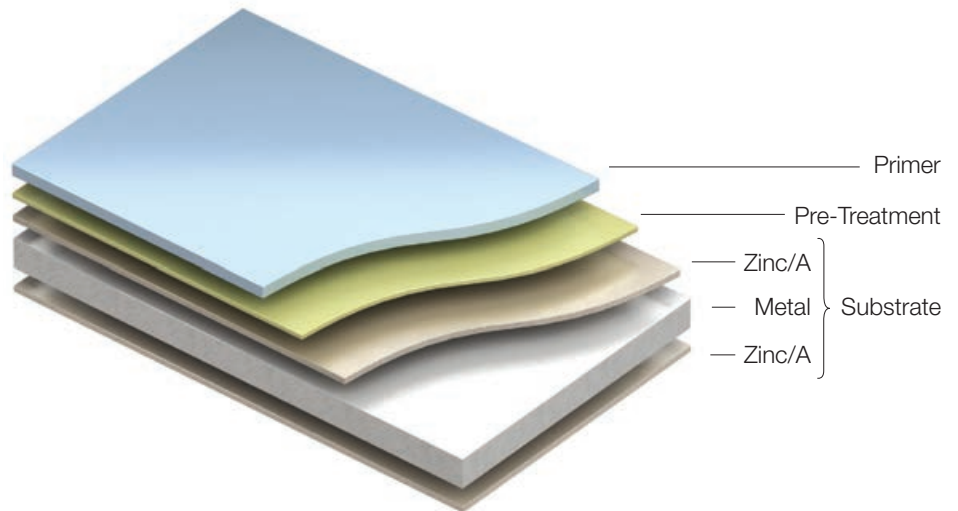
Buildings may contain areas where different conditions apply and therefore may need to be considered separately if they have different micro-environments. This table is provided for general guidance only and is based on the information as detailed in EN ISO 12944-2.

CLEANSafe 15

CLEANSafe 15 is a chemically inert polyester paint, applied to pre-treated metal, and specifically developed for controlled environments.

Characteristics

- Efficient and durable internal lining system.
- Good light-reflecting properties.
- Easy to clean.
- Resistant to staining, mould growth and surface extraction.
- Moderate robustness.
- Moderate chemical and humidity corrosion resistance.
- Non-toxic.
- Resistant to impact and surface wear.



Technical Data

Properties	Organic Polyester	
Applications	Internal Applications only	Insulated panels to ceilings, walls, ancillaries and accessories.
Descriptions	Substrate	Hot-dip zinc/aluminium coated metal
	Thickness	Nominal: 15 µm
	Composition	1 Layer (primer)
	Colour	White RAL 9002 & RAL 9010
	Specular Gloss (60°)	30-50% (Medium Gloss)
	Surface Appearance	Smooth
	Protective Film	No
Performance	Scratch Resistance	2100 g
	Abrasion Resistance	30 mg
	Impact Resistance	Good
	Salt Spray	250 hrs
	Condensation Resistance	500 hrs
	Temperature Resistance	Maximum 100°C
	Fire – BS476: Part 7: 1987	Class 1 and Class 0, as defined by Building Regulations

Notes

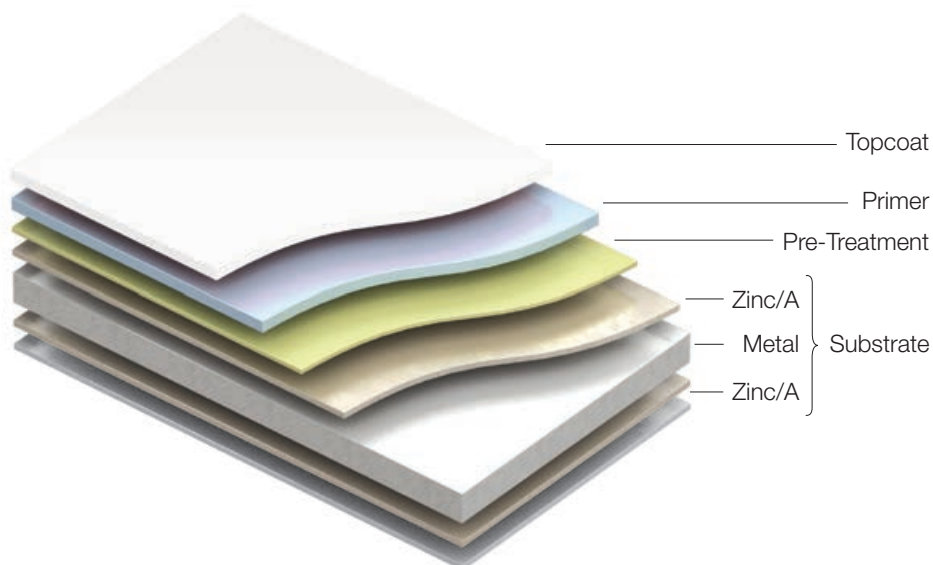
All figures are based on minimum properties and do not constitute a specification, they may differ depending on individual requirements.

CLEANSafe 25

CLEANSafe 25 is a chemically inert polyester paint, applied to pre-treated metal, and specifically developed for controlled environments.

Characteristics

- Food safety – suitable for surfaces immediately behind food preparation, processing surfaces or equipment.
- Easy to clean.
- Resistant to staining, mould growth and surface extraction.
- Good robustness.
- Good chemical and humidity corrosion resistance.
- Non-toxic.
- Resistant to impact and surface wear.



Technical Data

Properties	Organic Polyester	
Applications	Internal Applications only	Insulated panels to ceilings, walls, ancillaries and accessories.
Descriptions	Substrate	Hot-dip zinc/aluminium coated metal
	Thickness	Nominal: 25 µm
	Composition	2 Layers (primer and topcoat)
	Colour	White RAL 9002 & RAL 9010
	Specular Gloss (60°)	15% (Medium Gloss)
	Surface Appearance	Smooth or Textured
	Protective Film	Yes - Standard
Performance	Scratch Resistance	>3000 g
	Abrasion Resistance	35 mg
	Impact Resistance	Good
	Salt Spray	250 hrs
	Condensation Resistance	1000 hrs
	Temperature Resistance	Maximum 120°C
	Fire – BS476: Part 7: 1987	Class 1 and Class 0, as defined by Building Regulations

Notes

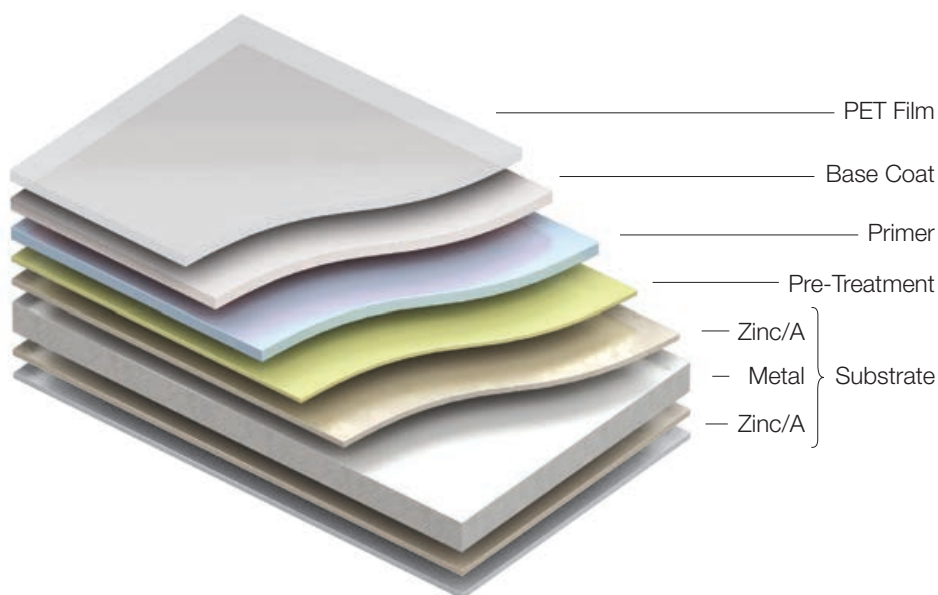
All figures are based on minimum properties and do not constitute a specification, they may differ depending on individual requirements.

CLEANSafe 55

CLEANSafe 55 is a chemically inert colaminated PET film and polyester paint, applied to pre-treated metal, and specifically developed for controlled environments.

Characteristics

- Food safety – suitable for surfaces immediately behind food preparation, processing surfaces or equipment.
- Easy to clean.
- Resistant to staining, mould growth and surface extraction.
- Excellent robustness.
- Excellent chemical and humidity corrosion resistance.
- Non-toxic.
- Resistant to impact and surface wear.



Technical Data

Properties	Organic PET Film + Polyester Paint	
Applications	Internal Applications only	Insulated panels to ceilings, walls, ancillaries and accessories.
Descriptions	Substrate	Hot-dip zinc/aluminium coated metal
	Thickness	Nominal: 55 µm
	Composition	3 Layers (primer, polyester base coat and PET film)
	Colour	White RAL 9002 & RAL 9010
	Specular Gloss (60°)	15% (Medium Gloss)
	Surface Appearance	Smooth
	Protective Film	Yes - Standard
Performance	Scratch Resistance	>4000 g
	Abrasion Resistance	20-30 mg
	Impact Resistance	Very good
	Salt Spray	700 hrs
	Condensation Resistance	2500 hrs
	Temperature Resistance	Maximum 80°C
	Fire – BS476: Part 7: 1987	Class 1 and Class 0, as defined by Building Regulations

Notes

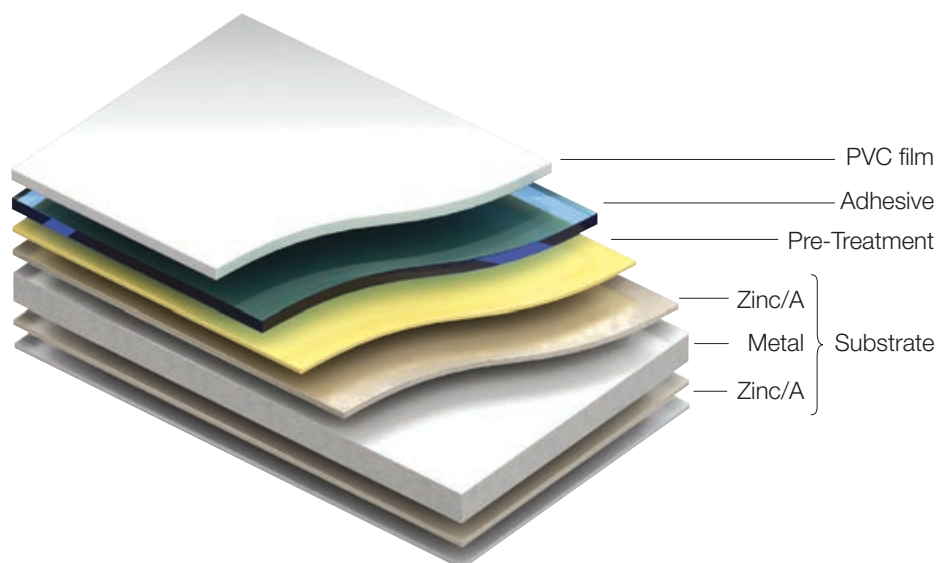
All figures are based on minimum properties and do not constitute a specification, they may differ depending on individual requirements.

CLEANSafe 150

CLEANSafe 150 is a chemically inert polymer film, laminated to pre-treated metal, and specifically developed for controlled environments.

Characteristics

- Food safety – suitable for surfaces immediately behind food preparation, processing surfaces or equipment.
- Easy to clean.
- Resistant to staining, mould growth and surface extraction.
- Excellent robustness.
- Excellent chemical and humidity corrosion resistance.
- Non-toxic.
- Resistant to impact and surface wear.



Technical Data

Properties	Organic Polyester	
Applications	Internal Applications only	Insulated panels to ceilings, walls, ancillaries and accessories.
Descriptions	Substrate	Hot-dip zinc/aluminium coated metal
	Thickness	Nominal: 150 µm
	Composition	2 Layers (Adhesive and PVC film)
	Colour	White RAL 9001, RAL 9002, RAL 9003 & RAL 9010
	Specular Gloss (60°)	10-20% (Low Gloss)
	Surface Appearance	Smooth - bears a lightly embossed finish
	Protective Film	Yes - Standard
Performance	Scratch Resistance	>4000 g
	Abrasion Resistance	30 mg
	Impact Resistance	Very Good
	Salt Spray	500 hrs
	Condensation Resistance	1000 hrs
	Temperature Resistance	Maximum 60°C
	Fire – BS476: Part 7: 1987	Class 1 and Class 0, as defined by Building Regulations

Notes

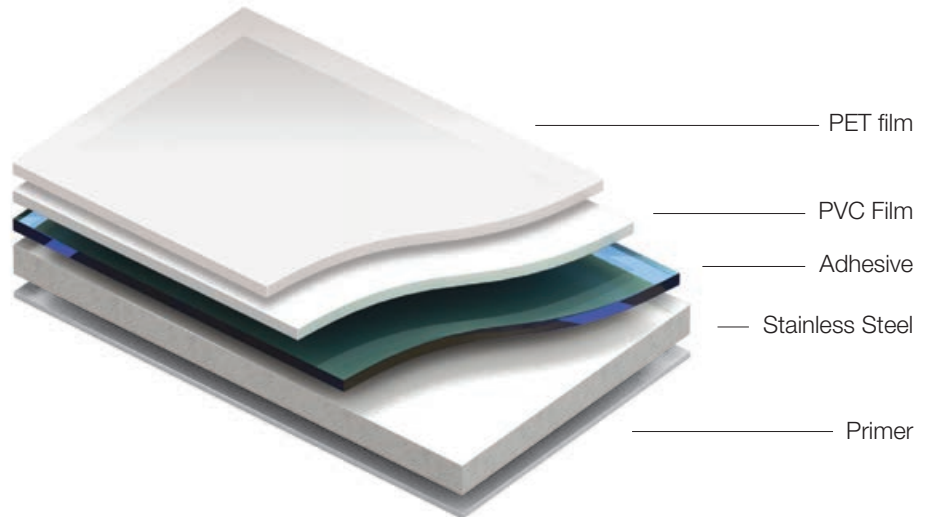
All figures are based on minimum properties and do not constitute a specification, they may differ depending on individual requirements.

CLEANSafe Inox 150+

CLEANSafe Inox 150+ is a colaminated PET film applied to pre-treated metal, and specifically developed for A16 internal environments.

Characteristics

- Food safety - suitable for slaughter houses, mushroom cultivation, cooking rooms, drying rooms for cheese, laboratories for bread making.
- Easy to clean.
- Food certificate available on request.
- Excellent chemical and humidity corrosion resistance.
- Non-toxic.
- Resistant to impact and surface wear.



Technical Data

Properties	Colaminated PVC and PET film $\geq 110 \mu\text{m}$	
Applications	Internal Applications only	Insulated panels to ceilings, walls, ancillaries and accessories.
Descriptions	Substrate	Inox
	Thickness	Nominal value: $110 \mu\text{m}$
	Composition	3 layers (Adhesive, PVC film, PET film)
	Colour	White RAL 9002 & RAL 9010
	Specular Gloss (60°)	33% (Low Gloss)
	Surface Appearance	Smooth
	Protective Film	Yes - Standard
Performances	Scratch Resistance	Very good
	Abrasion Resistance	26,5 to 27,5 mg
	Impact Resistance	Very good
	Salt Spray	1000 hours
	Condensation Resistance	1000 hours
	Temperature Resistance	Maximum 60°C
	Reaction to fire	B as defined by NF EN 13501-1

Notes

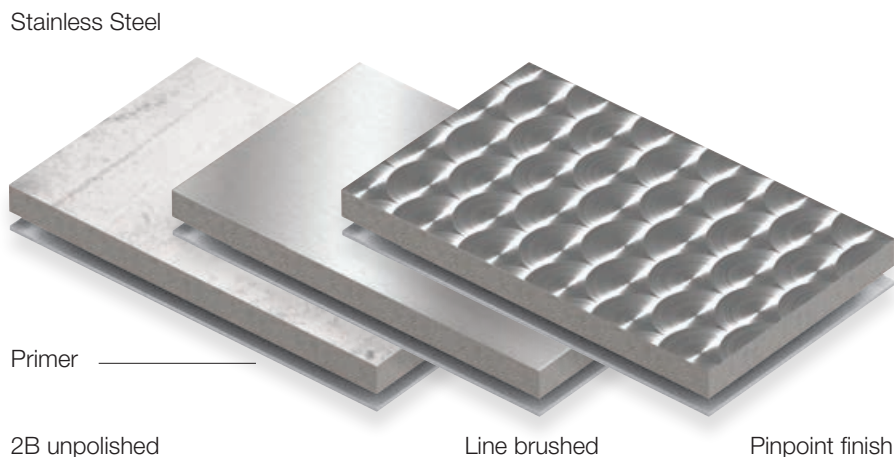
All figures are based on minimum properties and do not constitute a specification, they may differ depending on individual requirements.

CLEANSafe Inox 304

CLEANSafe Inox 304 is chemically inert, crevice free austenitic stainless steel, specifically developed for controlled environments and high corrosive environments.

Characteristics

- Food safety - suitable for slaughter houses, mushroom cultivation, cooking rooms, drying rooms for cheese, laboratories for bread making.
- Easy to clean.
- Food certificate available on request.
- Excellent chemical and humidity corrosion resistance.
- Non-toxic.



Technical Data		
Properties	Cold Rolled - Annealed	
Applications	Internal Applications only	Insulated panels to ceilings, walls, ancillaries and accessories.
Descriptions	Substrate	Austenitic Stainless Steel 304
	Thickness	Nominal: 0.6 mm
	Colour	Mill Finish
	Gloss	Semi-Reflective
	Surface Appearance	2B - Smooth unpolished, Line brushed or Pinpoint finish
	Protective Film	Yes
Performance	Scratch Resistance	Good
	Abrasion Resistance	3.2 mg
	Impact Resistance	Excellent
	Salt Spray	500 hrs
	Temperature Resistance	Maximum 100°C
	Fire – BS476: Part 7: 1987	Class 1 and Class 0, as defined by Building Regulations

Notes

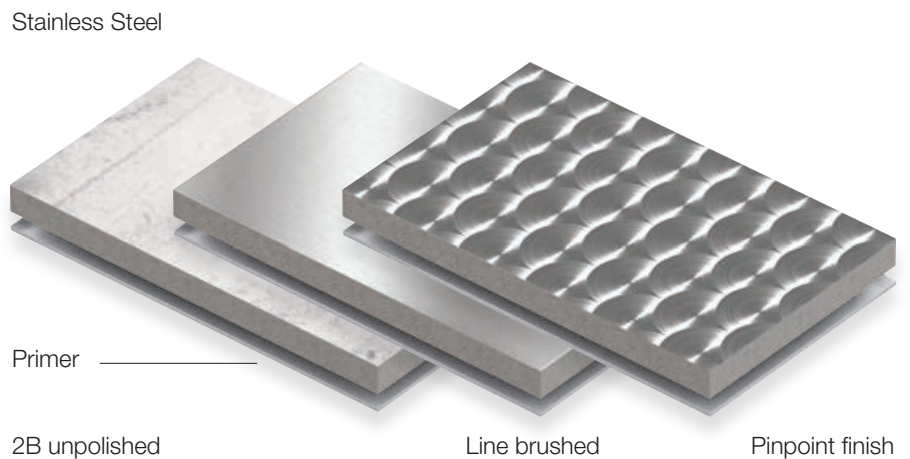
All figures are based on minimum properties and do not constitute a specification, they may differ depending on individual requirements.

CLEANSafe Inox 316L

CLEANSafe Inox 316L is chemically inert, austenitic stainless steel, specifically developed for for A15 and A16* internal environments.

Characteristics

- Food safety - suitable for slaughter houses, mushroom cultivation, cooking rooms, drying rooms for cheese, laboratories for bread making.
- Easy to clean.
- Food certificate available on request.
- Excellent chemical and humidity corrosion resistance.
- Non-toxic.



Technical Data

Properties	Cold Rolled - Annealed	
Applications	Internal Applications only	Insulated panels to ceilings, walls, ancillaries and accessories.
Descriptions	Substrate	Austenitic Stainless Steel 316
	Thickness	Nominal: 0.6 mm
	Colour	Mill Finish
	Gloss	Semi-Reflective
	Surface Appearance	2B - Smooth unpolished, Line brushed or Pinpoint finish
	Protective Film	Yes
Performance	Scratch Resistance	Good
	Abrasion Resistance	3.2 mg
	Impact Resistance	Excellent
	Salt Spray	500 hrs
	Temperature Resistance	Maximum 100°C
	Fire – BS476: Part 7: 1987	Class 1 and Class 0, as defined by Building Regulations

Notes

All figures are based on minimum properties and do not constitute a specification, they may differ depending on individual requirements.

* The use in A16 is strictly reserved for the 2B finish which does not have a treated surface. The other finishes, unified or with a pinpoint finish are limited to A15.



Inspection and maintenance

Regular inspection and maintenance will ensure the long life of the panels.

The frequency of inspection and maintenance is determined by the corrosiveness of the environment, as well as the type of activity. The table below provides a list of simple checks that can be done.

The owners of cold store facilities should keep records in relation to the construction of their building, and maintain a list of the inspections and maintenance that is carried out.

Area to be inspected	Risk	Actions
Gathering of dirt	Could cause the disintegration of the finish.	Cleaning. Please see the section 'Cleaning'.
State of the finish	Cracks, peeling, discolouring.	Evaluate the importance, seriousness and the type of damage, see the section on 'Repairing'.
Scratches and bumps	Could cause the corrosion of the metallic substrate.	Evaluate the importance, seriousness and the type of damage, see the section on 'Repairing'.

Notes

The aesthetic nature of a building is not considered as a requirement in relation to durability.



Cleaning

To maximise performance and maintain high standards of hygiene, the coatings need to be cleaned using the recommended procedures described below. The frequency of cleaning and cleaning agents used is dictated by the types of activities conducted in any given area.

Clean means “clean to touch”, which implies the area is free from any dirt, dust or food particles that you can see, and that does not necessary smell. Cleaning is the removal of these particles and / or smells.

Disinfecting means apply heat and / or chemicals to a surface so that the number of bacteria on the surface is reduced to a level that is safe for food contact.



Cleaning and disinfecting should usually be done as separate processes. A surface needs to be thoroughly cleaned before it is disinfected.

Maintenance

In order to clean insulated panels, the below is recommended:

- Rinse thoroughly the surface with clean water
- Respect the quantities indicated
- Dilute the products in warm water
- Respect the following water pressures:
 - Maximum 50 bars at 30cm from the surface of the panel with a large hose
 - Respect the application temperatures, which generally are between 30 and 50° C maximum
- Respect the contact time with the panel, cleaning for maximum 15 minutes
- Remove any remaining dirt with a non abrasive product which will not damage the finish
- Rinse thoroughly the surface cleaned with clean water
- Do not use cleaning products containing chlorine, or related products, on metal sheets or inox
- Never mix different cleaning products
- Limit, if possible, the pH of the cleaning products to between 4 and 9. For any other strengths, a compatibility analyse between the cleaning product and the organic finish, or inox, should be done by the supplier of the cleaning products.
- The use of organic finishes in atmospheres where the temperature is greater than 50° C can cause a yellowing of the panel colour over time.

During cleaning, the following points should be taken into account:

1. If one uses a stronger concentration of the cleaning product than recommended, this could cause damage to the surface of the finish
2. Always clean the surfaces from top to bottom.
3. Excessive cleaning is not necessarily beneficial.
4. The use of a vapour cleaner can damage the finish given the high temperature.
5. High-pressure cleaning should not be done too closely, or perpendicularly, to the finish. At the joints, the high-pressure cleaner should be pointed downwards to avoid forcing water into the joints. Old finishes should be treated with care.
6. Respect the recommendations from the manufacturer regarding the use of cleaning products, and check their compatibility with the finish with their technical service. In the instance where a compatibility analysis is requested, the technical datasheet and security sheet for each cleaning product is necessary.

Cleaning product		Isocab CLEANsafe* Finish						
pH of the concentration of the product used	Rust inhibitor	15	25	55	150	Inox 150+	Inox 304**	Inox 316L**
9 ≤ pH ≤ 12,5	With	-	-	A I	A I	A I	A I	A I
	Without	-	-					
4 < pH < 9		A NI	A NI	A I	A I	A I	A I	A I
1,5 ≤ pH ≤ 4	With	-	-	A I	A I	A I	A I	A I
	Without	-	-					

A = Adapted

- = Non-adapted

I = Intensive cleaning (daily cleaning)

NI = Non-intensive cleaning (monthly cleaning)

* = This table is strictly for information purposes only. In all cases the supplier of the cleaning product must ensure the compatibility of the product with the panel finish or the bare metal sheet.

** = Avoid all contact with products containing chlorine.

Notes

The extracts from the norme BP A36 719 from July 2010 << Maintenance of pre-painted galvanised steel in cold store and controlled environments are according to AFNOR. Only the original and complete text of the norm as distributed by AFNOR - available via the website www.boutique.afnor.org - should be consulted.

Panel Repair

Before performing any panel repair, the surface must be cleaned as described under the “Cleaning” section and allowed to dry properly. Surface preparation is important and should be carried out by specialist contractors using recommended methods and approved maintenance paints.

Minor scuffs: Occasionally sheets are damaged during handling or erection or in use. It is not necessary to treat the affected area unless the paint surface is visibly damaged.

Scratches: Where the coating has been scratched down to the substrate, the affected area should be treated with suitable touch-up paint in accordance with the paint company’s recommendations. It is important to ensure that the applied paint is no wider than the original scratch. To achieve this, the paint should be applied with an artist’s or child’s medium to fine paint brush. Touch-up paints are by definition air drying, therefore over the years they will change colour differently from the original stoved coating. For this reason, it is good practice to keep the applied area as small as possible.

Dents: Where the external steel sheet of the panel has been dented and the coating has not been scratched or damaged, it is not necessary to treat the affected area. For aesthetic reasons, it may be a requirement to have the affected areas repaired as described in the “Indentations” section.

Heavy dents or punctures: The affected areas can be repaired as described in the “Indentations” section. This work should be carried out by specialist repair companies who are approved over-paint applicators and provide guarantees for the repair work.

Over-painting: Surface preparation and over-painting should be carried out by specialist repair companies using approved maintenance paints. Cellulose based paints should not be used.

Indentations:

1. Remove paint from damaged area using abrasive disc and feather out areas. Blow off excess dust and wipe down with professional panel wipes.
2. Mix and apply multipurpose body filler according to manufacturer’s recommendations to damaged area, avoiding surrounding paintwork. Panel profiles should be matched in the repair.
3. Finish filled area using abrasive disc and feather out edges. Blow off excess dust and wipe down with professional panel wipes.
4. Check repairs, and then apply primer according to paint company recommendations, keeping spray area to a minimum and avoiding hard edges. Dry in accordance with paint company’s recommendations.
5. Apply suitable topcoat paint system and bake as per paint company’s recommendations.



Your distributor

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